

AMENDMENTS TO THE CLAIMS

No claim Amendments are presented.

1. - 15. (Canceled)

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11/16/04

presented
16. (Previously Amended) A film forming unit for discharging a coating solution from a coating solution discharge nozzle toward a substrate to form a layer on a surface of the substrate, comprising:

a press type pump including a pump body for sending said coating solution to said coating solution discharge nozzle, and a press member for pressing the pump body, the coating solution being sent into the pump body from the upstream by pulling the press member, the coating solution being sent from the pump body toward the downstream by pressing the press member, the amount of coating solution sent toward the downstream being adjusted by the amount of press of the press member,

a pressure detector for detecting pressure in a flow path for the coating solution between said press type pump and said coating solution discharge nozzle; and

a pressure controller for controlling the amount of press of the press member of said press type pump based on a detected value from said pressure detector;

the amount of press of the press member of said press type pump being controlled based on the pressure in the flow path for the coating solution between said press type pump and said coating solution discharge nozzle, to control the amount of discharge of the coating solution to be supplied from said coating solution discharge nozzle toward the surface of the substrate;

a transferring mechanism for transferring said coating solution discharge nozzle with respect to the substrate; and

a transferring controller for controlling said transferring mechanism so as to move said nozzle along a continuous path being able to cover a surface of the substrate.

17. (Original) A film forming unit for discharging a coating solution from a coating solution discharge nozzle toward a substrate to form a layer on a surface of the substrate, comprising;

a press type pump including a pump body and a press member for sending said coating solution to said coating solution discharge nozzle, the coating solution being sent into the pump

body from the upstream by pulling the press member, the coating solution being sent from the pump body toward the downstream by pressing the press member, the amount of coating solution sent toward the downstream being adjusted by the amount of press of the press member, a displacement gauge for detecting the amount of press of the press member of said press type pump; and

a controller for controlling operation of an alarm generating portion based on a detected value from said displacement gauge,

said alarm generating portion being operated when the amount of press of the press member of said press type pump goes out of a preset reference range.

18. (Original) A film forming unit for discharging a coating solution from a coating solution discharge nozzle toward a substrate to form a layer on a surface of the substrate, comprising:

a press type pump including a pump body and a press member for sending said coating solution to said coating solution discharge nozzle, the coating solution being sent into the pump body from the upstream by pulling the press member, the coating solution being sent from the pump body toward the downstream by pressing the press member, the amount of coating solution sent toward the downstream being adjusted by the amount of press of the press member,

a displacement gauge for detecting the amount of press of the press member of said press type pump;

a cleaning portion for cleaning said coating solution discharge nozzle;

a drive mechanism for moving said coating solution discharge nozzle to said cleaning portion; and

a controller for controlling operation of said drive mechanism based on a detected value from said displacement gauge,

said coating solution discharge nozzle being moved to the cleaning portion by said drive mechanism for cleaning of the coating solution discharge nozzle when the amount of press of the press member of said press type pump goes out of a preset reference range.

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19. (Previously Amended) A film forming unit according to claim 16,
wherein a flow path for flowing the coating solution to be discharged; and

a filter provided in the flow path for removing air bubbles from the coating solution.

20. (Original) A film forming unit as set forth in claim 19,
wherein said filter is made of a porous resin.

21. (Original) A film forming unit as set forth in claim 16, further comprising:
a substrate holding portion for horizontally holding said substrate,
while said substrate holding portion and said coating solution discharge nozzle are
relatively driven along the plane direction of the substrate, the coating solution being discharged
from the coating solution discharge nozzle to form a solution layer of the coating solution on a
surface of the substrate.

22. (Original) A film forming unit as set forth in claim 16, further comprising:
a mixing tank for mixing a coating solution of a high viscosity and solvent for the
coating solution to prepare a coating solution of a low viscosity, the coating solution prepared in
viscosity in the mixing tank being sent to the coating solution discharge nozzle by said press
type pump.

23. (Original) A film forming unit as set forth in claim 16,
wherein said coating solution is a resist solution.

24. (Previously Presented) A film forming unit as set forth in claim 16, further
comprising:
a mask member being positioned above the surface of the substrate and defining an area
to be covered with the coating solution.

25. (Previously Presented) A film forming unit as set forth in claim 16,
wherein the transferring mechanism including a nozzle conveyor for transferring the
nozzle in a x-direction and a substrate in a y-direction perpendicular to the x-direction.